

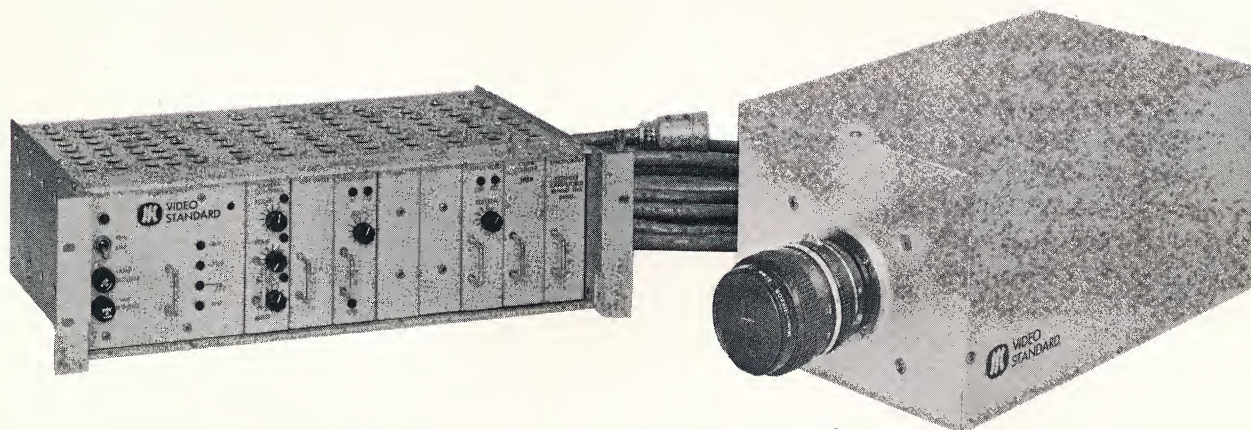


SIERRA  
SCIENTIFIC  
CORPORATION

# Model LSV 1.5R

## Video Standard Cameras

*Aug 77  
High resolution  
scan-rate option*



**Model LSV 1.5R**  
Very High Resolution Camera

### Features:

Uniformly high resolution - better than 1500 TVLines/picture height in the center and 1200 TV/ph in any part of the raster.

1% combined linearity & geometric distortion.

Automatic control of scan size vs line rate, temperature and voltage variation.

30 MHz Video preamplifier.

6na (max.) input noise over 30mHz (4na typ.)

True D.C. video output.

Multiple line rate sync generator.

All controls located in CCU

High voltage vidicon operating mode.

Alignment by electromagnetic coils.

Adapter for 39mm Leica or 42mm Pentax mounts, others available.

The model LSV-1.5R is especially made for applications requiring high-resolution and a high degree of resolution uniformity such as document reading. It makes use of the special characteristics of the RCA C23225 camera tube and C23227 deflection system which are designed to work together to provide high-resolution over the entire display area. Typically this is 1500 TV lines/ph at the center and 1200 TV lines/ph in the corners when measured at 525 scan lines, 30 frames, 60 fields per second interlaced 2:1. The tube is designed for minimum astigmatism and maximum uniformity of resolution over the entire scanned area. The following table shows the typical improvement in these factors over the regular 8521 vidicon.

|                                                  | C23225 | 8521 |
|--------------------------------------------------|--------|------|
| Anastigmatic Index <sup>1</sup><br>(Center Area) | 0.8    | 0.8  |
| Anastigmatic Index<br>(Corner Area)              | .7     | .5   |
| Resolution Uniformity <sup>2</sup>               | 80%    | 50%  |

<sup>1</sup>Anastigmatic Index - ratio of least to greatest response to 400 TV line as pattern orientation rotated.

<sup>2</sup>Resolution Uniformity - ratio of least (corner area) to greatest (center area) resolution.

Represented by:



**SIERRA  
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## Model LSV 1.5R Specifications

**Resolution:** Horizontal at 525 lines, 30 frames, 60 fields/sec. Center resolution 1500 TV lines/picture height. Corner 1200 TV lines per picture height. Vertical at any line rate:  $= 0.7 \times \text{line rate up to 1200 lines/picture height}$ .  
Note: For best results faceplate operating temperature should be between 28 and 34°C. - Faceplate temperature must not exceed 71°C. (160°F.)

**Geometry:** EIA combined linearity & geometric distortion.  $\pm 1\%$  maximum.

**Shading:** Less than 10% peak-to-peak over the central 90% of the picture - 20% overall.

**Signal to Noise Ratio:** 40db min. (43 db typical) with 600nA peak-to-peak current.

**Illumination:** For best results, a light level of 3-10 foot candles is recommended.

**Scan Rates:** Any rate in these ranges is available. Vertical frequency from 15 to 120Hz, Horizontal frequency from 15 to 40 KHz; 2:1 interlace or sequential scan. Lines/frame (useful range) 256-1536, all EIA rates (525, 675, 729, 875, 945, 975, 1023, 1225 lines/60 frames per second/2:1 interlace).

**Outputs:** All 75-ohm sending-end terminated: Video (2) 1.4 V peak-to-peak with sync.; D.C. coupled; blanking at ground. H drive; V drive; mixed blanking; Composite sync.: 4V peak-to-peak, negative going, D.C. coupled, base line at ground.

**Internal Controls:** Alignment (2); electromagnetic focus; mesh voltage, H and V size and centering; tube & cable compensation (2). Video gain preset; aperture correction level, sync level, clamp delay, all sync generation delays and pulse widths.

**Auto Target Control:** May be used over a limited range to compensate for variations in faceplate temperature or illumination level due to line voltage fluctuation, etc.

**Front Panel Controls:** Electrostatic focus; Beam current, Target Voltage/Auto Target switch, Video gain; pedestal.

**Testpoints:**  $\pm 12$  V, 3.6 V, GND. Focus ( $G_3$ ); beam ( $G_1$ ); target; video: preamp, processed and output.

**Power:** 90-140/180-280 VAC 50/400 Hz (by strapping). 75 watts max. 50 watts typical.

| MECHANICAL          | HEIGHT |       | WIDTH |       | DEPTH |       | WEIGHT |     |
|---------------------|--------|-------|-------|-------|-------|-------|--------|-----|
|                     | In.    | Cm.   | In.   | Cm.   | In.   | Cm.   | Lb.    | Kg. |
| Camera Head         | 5.75   | 14.61 | 7.32  | 18.59 | 12.13 | 30.81 | 13.0   | 5.9 |
| Camera Control Unit | 5.25   | 13.3  | 19.0  | 48.3  | 13.0  | 33.0  | 22     | 9.9 |

Cable (15 ft.) (4.6m) Long; 0.63 in. 1.59 cm. diam. (Min. bend radius 2.5 in. [6.4 cm.])

